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Elk herd population plummets in Aspen, Vail areas as human use grows

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A photo illustration shows a bull elk with the Milky Way in the background.
Courtesy Photo



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One night, you can hear an Aspen-area resident talk about the roots of ski mountaineering in North America or listen to another tell tales of paddleboarding the Yukon Wilderness.

The next night, scientists from outside the Roaring Fork Valley might be in town discussing how President Donald Trump’s border wall affects wildlife and wilderness as well as communities or a researcher detailing the dramatic decline in the elk herds of Aspen and Vail.

Three winter speaker series hosted by the Aspen Center for Environmental Studies and various partners provide adventure, natural wonder and ecology in equal doses.

Potbelly Perspectives at ACES’s Hallam Lake headquarters typically features a Roaring Fork Valley resident sharing slides and tales of adventure.

For many people, majestic elk are the icons of the Rocky Mountains. The magnificent beasts exude strength, perseverance and wildness.

But the beleaguered herds that roam the Roaring Fork and Eagle valleys reached a tipping point and have experienced a 50% reduction in their population since around the year 2000, according to a researcher for the nonprofit conservation group Rocky Mountain Wild. Paul Millhouser says an increase in human population and everything associated with it — more residential development and people using more toys to push farther into the woods at all times of the year — have overwhelmed the ability of the elk herds to adapt and cope.

“The problem is the elk population is no longer resilient,” Millhouser said. “They’ve been putting up with all the insults and injuries of development and human activity throughout the ’80 and ’90s and finally it reached that point where all that stretch was taken out.”

Millhouser is a landscape ecologist and GIS specialist with Denver-based Rocky Mountain Wild. He was the featured speaker in the Naturalist Nights speaker series presentation in Carbondale on Jan. 22 and Aspen on Jan. 23. He titled his talk “Disappearing Elk: Loving Our Wild Places to Death.” The winter speaker series is hosted by Aspen Center for Environmental Studies, Wilderness Workshop and Rocky Mountain Audubon Society (see related story).

“Years ago it started around a campfire with people talking,” said Chris Lane, ACES executive director. Now the low-key speaker series draws scores of people on a weekly basis.

“In Aspen we have people come down no matter who’s talking,” Lane said. The series has evolved into more than a lecture. It’s a gathering of friends and a chance to share an experience, he said.

Naturalist Nights brings ecologists and other scientists to Hallam Lake in Aspen and the Third Street Center in Carbondale each week to provide information on everything from why female birds sing to the conditions that led to last March’s amazing avalanche cycle.

Naturalist Nights is a collaboration between ACES, Wilderness Workshop and Roaring Fork Audubon. A recent presentation about the declining elk herds in the Aspen area drew about 175 people to Carbondale and 75 to Aspen, so it has proven drawing power.

This year, ACES teamed with the town of Snowmass Village and the Collective, a community gathering space, to start a new speaker series called Wild Perspectives. It’s a combination of first-person adventure like Potbelly Perspectives and environmental science like Naturalist Nights.

Why a third series? “We long wanted to get engaged with Snowmass,” Lane said.

The three speaker series help ACES with its core mission of being a convener and educator rather than an advocacy organization, Lane said. It allows the community to see and hear interesting speakers at little or no cost.

The small presentations are one of ACE’s “bread-and-butter” missions along with school education, Lane said. There is no shortage of topics to tackle. ACES and its partners receive more applications than they can accommodate. They aim for an interesting mix.

“Some people are great speakers and some aren’t,” Lane said. “Some have big followings and some don’t. We try to mix it up.”

The speaker series extend through March this winter. Go to ACES web page at <http://www.aspennature.org> and click on the link for programs & events. Information is available on each of the series.

“ There’s more people there, (so) the elk don’t want to be there.”
Paul Millhouser

Using data collected between 1981 and 2018, Millhouser has plotted the elk population of the two valleys. A steady increase throughout the 1980s led to a plateau of between 19,000 to 20,000 elk during the 1990s.

“It seems like something changed around 2000,” Millhouser said.

A dramatic graph at his presentation showed elk numbers plummeting from 2001 through 2015, when the numbers bottomed out at about 10,000 — an alarming decrease of almost 50% in just 15 years. There’s been a slight uptick in recent years, but Millhouser fears that’s an illusion. Colorado Parks and Wildlife officers in Eagle County have [expressed their concerns](#) about the declining numbers.

He dove into research to try to find out what is happening. He created models that plugged in all possible factors in the elk’s demise. He created maps that show the level of road development and, thus, habitat fragmentation, between 1981 and 2018. The maps show development in the 1990s filled in the valley floors and adjacent lands along the rivers.

“You didn’t see a lot of expansion into new areas,” Millhouser said. “You saw existing areas getting dense. I think that’s because most of the land that is available is in the national forest where it’s not likely to be developed. So people are filling in everywhere they could.

“The winter habitat and the (calving) areas especially really took a big hit,” he continued. “That’s got to have an impact. That’s making critical habitat harder to access.”

The development maps shed light on a new trend starting with the new century.

“By about 2000, the winter habitat was about as fragmented as it could be,” Millhouser said. “At this point, the development started turning into areas that were traditionally summer habitat. When the elk already weren’t getting the winter habitat they need, that summer habitat becomes more critical because if they can’t feed well in the winter, they sure as heck better bulk up during the summer and fall or they’re going to be out of luck.”

The problem extends beyond new residences. Oil and gas production, exploding recreation and, to a lesser degree, hunting all play a role in the declining numbers of elk, Millhouser said.

Colorado Parks and Wildlife started issuing fewer hunting licenses in 2005 for elk in the game units covering the two valleys. That followed five years of steep declines in elk population and an increase in hunting licenses in 2000. But in general, the number of hunters has remained relatively stable, Millhouser said.

But what has changed is the number of people recreating on public lands, both winter and summer, he said. Mountain bikers clamor for more trails. Backpackers hit popular routes in droves and forced the U.S. Forest Service to set limits at the Conundrum Hot Springs and consider limits on the popular Four Pass Loop southwest of Aspen. Larger and more powerful snowmobiles and dirt bikes reach farther into the backcountry on a tank of gas. The surge in popularity in backcountry skiing and snowboarding lures people into places that were formerly left to wildlife.

More recreation restricts access to habitat. “There’s more people there, (so) the elk don’t want to be there,” Millhouser said.

The result has been a drastic drop in the reproductive success of elk. Generally speaking, an elk herd needs a ratio of nearly one calf per two cows to grow. The calf/cow ratio in the two valleys has been less than 0.48 every year since 2004 and all but two years between 2000 and 2018, according to CPW estimates.

“And so thud. The elk just haven’t been able to bounce back,” Millhouser said. “Their reproductive success is, I think, long-term changed in a way that is going to hamper any recovery.”

CPW [launched a study](#) last winter on elk recruitment. Pregnant cow elk were captured and implanted with transmitters that dropped out when they gave birth in the spring. Wildlife officers scrambled to the sites to fit the newborns with collars or ear-tag transmitters so their travel patterns and survival rates can be studied.

The goal, CPW officials said, is to determine if elk calves aren't surviving or if cows aren't getting pregnant.

The study will also show elk migration patterns and help wildlife officers and public land managers gauge if recreation is affecting recruitment. Pitkin County Open Space and Trails is helping fund the six-year study.

Gary Tennenbaum, executive director of the open space program, said assessments by a wildlife biologist are part of every management plan for major properties owned by the local agency. The input on wildlife has led to creation of [winter closures](#) from Dec. 1 through May 15 on numerous properties, including Sky Mountain Park outside of Snowmass Village and Glassier open space in the midvalley, he said.

"It gives them the best chance of making it through the winter," he said.

Millhouser plans to expand his research this spring into looking at the effectiveness of seasonal closures for wildlife when there are violations by humans. Tennenbaum said Pitkin County Open Space and Trails experiences only a few violations of seasonal closures.

"The biggest piece for us is enforcement of those closures," he said. The open space program emphasizes education but verifies compliance with cameras at major trailheads. Dogs are also banned from some properties to be more wildlife-friendly.

The program continues to monitor wildlife use of its major properties after a management plan is adopted to make sure wildlife use isn't diminished. Tennenbaum said elk continue to use Sky Mountain Park during winters and deer use it year-round.

He agreed with Millhouser's assessment that multiple factors have lead to declining elk population — from recreation and hunting to land development and natural factors such as drought.

"My big thought is try to work together and not blame one user," Tennenbaum said.

Pitkin County Commissioner Greg Poschman watched a live stream of Millhouser's presentation and called the population decline a call to action. The Aspen native said after witnessing the level of development in the valley and the explosion of recreation over the decades, it makes sense to him that elk herds have reached the threshold of resilience.

"We've crossed that line," he said.

As a resident of Brush Creek Village, in the hills above the intersection of Highway 82 and Brush Creek Road, he has a bird's eye view of elk migration patterns. He cringed at the thought of a single vehicle smashing into five elk last winter. Three or so died outright. A couple of others staggered from the scene and died later.

He believes one small but worthwhile step the Roaring Fork Valley could take for the benefit of elk is building a wildlife overpass of Highway 82 in an area or areas that experts deem most beneficial.

"Looking at the way we're killing elk on the highway, we should really be looking at an overpass," Poschman said.

Some underpasses were built during the expansion to four lanes specifically for the benefit of wildlife, such as in Emma and Snowmass Canyon, but the effectiveness is hard to gauge.

He's not interested in assigning blame among recreation user groups, but feels enough trails have been provided for forest visitors of all types.

"It wouldn't bother me if we took a step back from trail building and focused on (elk herd) resilience," Poschman said. "Let's think twice about opening a new area."

Millhouser said research on elk would benefit from better data collection by the Forest Service on numbers of visitors, what areas of national forests they are visiting and what they are doing. The more data collected on human actions affecting wildlife, the better management can be tailored to needs.

However, he said he's not too optimistic that the elk herds outside of Aspen and Vail can bounce back to the 20,000 level.

"Elk are still facing all these problems that they have been facing the entire time and worse than ever," he said. "The population has remained low for quite a long time. A little uptick. Maybe that's a good sign. I hope so, but really, I think they don't have the ability to bounce back. If there is another serious event — maybe a really hard winter — I think the population could crash. CPW disagrees. They think the population here can be stable where it is. I hope they're right but I think they're wrong."

He urged audiences of 170 people in Carbondale and about 75 in Aspen to talk to their county commissioners to prevent further fragmentation of habitats — for the benefit of the remaining 10,000 elk.

"Really, let those elk do what they do without our interference," Millhouser said.

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